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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/755,888	01/13/2004	William Bornstein	AUS920030988US1(4031)	1544
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IBM CORPORATION (JSS) C/O SCHUBERT OSTERRIEDER & NICKELSON PLLC 6013 CANNON MOUNTAIN DRIVE, S14 AUSTIN, TX 78749			EXAMINER BAYAT, ALI	
			ART UNIT 2624	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/755,888	<b>Applicant(s)</b> BORNSTEIN ET AL.	
	<b>Examiner</b> Ali Bayat	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 13 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                 | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08).<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claims [8-12] are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim [8] defines [a machine-accessible medium containing instructions, which when executed by a machine, because said machine to perform operations, comprising:] embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive

material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed [a machine- accessible medium containing instructions, which when executed by a machine, cause said machine to perform operations, comprising:] can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure. Examiner suggests amending the preamble of claim 8 to "computer-readable medium encoded with instructions capable of being executed by a computer to perform operations comprising:" further in claims 9-12, please change "The machine-accessible medium" to "the computer-readable medium".

### **Claim Rejections - 35 USC § 102**

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 6-10 and 13-16 are rejected under 35 U.S.C. 102 (e) as being anticipated by Gruhlke ET al. (Pub. No: US 2005/0134712).

In regard to claim 1, Gruhlke provides for taking multiple color data readings ( Fig.2 elements 121-123, in regions 131-133 respectively Para.38) with more than one sensing elements (Fig.2 elements 121-123, in regions 131-133 respectively Para.38 ) of an array in one collecting location during a single exposure ( Fig.2 element 128, para.52); associating the one collecting location with a pixel position in an image to be portrayed ( Fig.2 element 114,para.40 see image signal 114); and determining a color value for the pixel position in the image based on the multiple color data readings ( Fig.2 elements 141,142,143, which corresponds to red filter , green filter and blue filter respectively, para.41).

With regard to claims 2 and 9 Gruhlke provides for determining a sensing element of the more than one sensing elements is defective ( Para.106, note defective sensor element), wherein the sensing element is associated with a color ( Fig.2 elements 141-143 which corresponds to red filter , green filter and blue filter respectively); and positioning the array to align a non-defective sensing element of the more than one sensing elements with the one collecting location ( Fig.2 element 114,para.40 see image signal 114) , wherein the non-defective sensing element is associated with the color. Para.43, see red filter, green filter and blue filter).

As to claims 3 and 10 Gruhlke provides for taking comprises taking multiple color data readings with more than one sensing elements, wherein the more than one sensing elements comprise color filters selected from a group of color filters comprising

red, green, blue, cyan, orange, yellow, magenta ( Para.43 , or clear ( para.74).

In regard to claims 6-7, see the rejection of claim 1. They recite similar limitations as claim 1. Hence they are similarly analyzed and rejected.

As to claim 8, see the rejection of claim 1. It recites similar limitations as claim 1. Except for a machine-accessible medium (para.147, note storing in non-volatile memory data). Hence it is similarly analyzed and rejected.

With regard to claim 13, see the rejection of claim 1. It recites similar limitations as claim 1. Except for reflective optics to redirect light to the series of sensing elements successively within one exposure (Fig.2 elements 141,142,143, which correspond to red filter, green filter and blue filter respectively Para.41). Hence it is similarly analyzed and rejected.

In regard to claim 14, Gruhlke provides for a first element sensitive to red light, a second element sensitive to blue light, and a third element sensitive to green light (Fig.2 elements 141,142,143, which corresponds to red filter , green filter and blue filter respectively Para.41, note filters 141-143 optically arranged in series with imaging element s).

As to claims 15-16, Gruhlke provides for the reflective optics comprise a digital micromirror device and control circuitry to redirect the light to the series of sensing elements successively within the one exposure (Fig.12D element 654Para.114).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-5, 11-12 and 17-21 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Gruhlke ET al. (Pub. No: US 2005/0134712) in view of Suzuki et al. (US 2,236,430).

In regard to claim 17, Gruhlke provides for a plurality of sensing elements (Fig.2 elements 121-123, in regions 131-133 respectively Para.38), comprising light sensors covered with colored filters to receive light and to generate filtered readings of data of the light( Fig.2 elements 141,142,143, which corresponds to red filter , green filter and blue filter respectively, para.41 ; a memory to associate the filtered readings from a collecting location with a pixel position in an image and to store the association into a location in memory (para.171); and a calculator to calculate a color value based upon the filtered readings ( Fig.2 elements 141,142,143, Para.41) from the plurality of light sensors ( Fig.2 elements 121,122 and 123 Para.38).

Gruhlke does not provide for a motor coupled to the plurality of light sensors, the motor configured to move the plurality of light sensors; moving logic coupled with the motor to move the plurality of light sensors in succession into the single collecting location to take the filtered readings . Suzuki provides for missing limitations (col.6 line 64-col.7 line 14); a memory to associate the filtered readings from a collecting location with a pixel position in an image and to store the association into a location in memory; and a calculator to calculate a color value based upon the filtered readings (Fig.2 elements 141,142,143, Para.41) from the plurality of light sensors (Fig.2 elements 121,122 and

123 Para.38). The prior arts of Gruhlke and Suzuki are combinable because they are from the same field of invention (color image sensing). It would have been obvious to a person of ordinary skill in the art at time the invention was made to incorporate the teaching of Suzuki with the system and method of Gruhlke to obtain a color still image, using solid-state image sensing devices such as a CCD, in a short amount of time. See the field of invention and col.1 lines 60-65.

With regard to claim 18, see the rejection of claim 17. It recites similar limitations as claim 17. Except for logic to determine that a light sensor of the plurality of light sensors is defective (Para.106, note defective sensor element).

As to claim 19, Gruhlke provides for the plurality of light sensors covered with colored filters, the colored filters being selected from a group of color filters comprising red, green, blue, cyan, orange, yellow, magenta, or clear( Para.43 , or clear ( para.74).

In regard to claims 4-5, 11-12 and 20-21 see the rejection of claim 17. They recite similar limitations as claim 17. Hence they are similarly analyzed and rejected.

#### **Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Bayat whose telephone number is 571-272-7444. The examiner can normally be reached on M-F 9:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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